

The female was not very shy, so I was able to take a photograph of her on the nest. As the owner of the tree was afraid that the tree would be broken down by curious small boys, the nest was removed and given to me. Upon blowing the eggs I found them only slightly incubated.

During April and May of 1925, five other nests were found in Bismarek. The height from the ground ranged from five to twenty-five feet. All were in spruce trees with the exception of one which was in a small boxelder, nearly dead. All of the nests contained three or four eggs or young.

The male is very solicitous as to the welfare of the female, and in all of the nests watched, he was seen feeding her while she sat on the nest. She, in turn, acted like a dependent nestling and greeted his approach with food with a shrill twittering and with fluttering wings. On one occasion he was observed to feed a female on the nest before any eggs were laid. Withal they were extremely interesting birds, and if sufficient time were available an interesting study could be made of them.

I believe the above data comprise the first nesting records for North Dakota.

NORTH DAKOTA STATE HISTORICAL SOCIETY,  
BISMARCK, N. DAK.

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## NESTING OF THE PINE SISKIN IN IOWA WITH REMARKS ON REGURGITATIVE FEEDING

BY MRS. MARIE DALES AND WALTER W. BENNETT

This paper records two nestings of the Pine Siskin (*Spinus pinus*) at Sioux City, Iowa. The first nest was found by the senior author while walking through Grandview Park on April 3, 1926. A Pine Siskin was observed to be busily engaged in tearing up an old Goldfinch nest, and carrying the salvaged material to a nearby balsam fir tree, where a new nest was being built on the outer branches about ten feet up. This nest building was continued for several days, but the nest was finally blown down in a heavy storm. A few days later the birds, probably the same pair, came to the senior author's trapping station, about two hundred yards south of the first nest, and gathered cotton. For two days they were seen gathering cotton; then another storm raged and the birds were not seen again.

On May 20, 1928, the senior author was called to see a nest in a small cedar tree on the front lawn of a neighbor, Mrs. Geo. Jepson. Three feet up in an evergreen tree not over four and a half feet high was a Pine Siskin's nest containing four remarkably large eggs for so



Pine Siskin on Its Nest, at Sioux City, Iowa.  
 Photographed by W. W. Bennett.

small a nest. The female bird was incubating at this time. Two days later one egg hatched, and the following day another egg hatched. The other two eggs disappeared from the nest. As the young birds grew one either fell out, or was crowded out of the nest. On May 30 the nest was empty.

The junior author first visited this nest at 6:30 A. M. on May 23, and found two eggs and two young. One egg was broken. The size of one of the young led to the suspicion that it may have been a Cowbird. The nest was made of weed stems and hair, and was lined with what appeared to be cotton and hair.

The tameness of the adult birds was remarkable. On this occasion the female remained on the nest until the observer came within five feet. Again the female would return to feed or brood the young while the junior author stood within two and a half feet from the nest. She returned to the nest during the placement of the camera twelve feet away, and once when a white card was put up on the edge of the nest for focusing she remained brooding fearlessly behind it. She insisted on brooding the young on this slightly chilly morning.

After a series of motion pictures had been obtained at a distance of twelve feet, the camera was moved to seven feet. While the camera was being focused the male siskin alighted in a nearby elm tree. As he gave the characteristic siskin call there was no muffling of the sound, as might have been expected if the mouth had been full of food. The

male presently flew to the nest, and in order to have some movie pictures of the exchange of places the camera was started. However, the bird on the nest did not leave, and in a moment she had been fed by the male, and by what was undoubtedly a regurgitative method.

The feeding process was a comparatively long one. As the male came near, the female turned her head, both of her mandibles began quivering, just as can be seen when a hen lifts her head after taking a drink. Then the male gave an evident gulp, shown by the movement of the throat feathers, and something whitish and soft appeared at the sides of the beak. The female's bill was opened and the male pushed the regurgitated food into it, the female also doing her part in receiving the food. Then the male's beak was withdrawn, and after another gulp more food appeared, and was fed in the same manner as before. This performance was repeated five times altogether, the female brooding continuously. Toward the end of the feeding as the male withdrew his beak from the female's mouth a string of saliva-like substance stretched between the two bills; this was immediately sucked in by the female. There must have been considerable of it, for there seemed to be a flow of it for nearly fifteen seconds. Then the male flew away.

The junior author believes there is little possibility of his being mistaken in interpreting this as regurgitative feeding. At a distance of a very few feet the male bird's bill was seen open and empty, then followed distinct throat gulps and soft food appeared each time between the mandibles. The female took about all of the food at each feeding that could have been contained within the mouth of the male, and the junior author clearly saw a several-times larger quantity of food pass between the two birds than could have been held in the mouth at one time. It is believed that these facts describe regurgitation.

Our time permitted observation on only this one feeding act on that morning, but we visited the nest again on the morning of May 27, and more motion pictures were made of the birds at the nest. At 6:30 A. M. the nest contained one young bird, which proved to be a Cowbird, and one egg. The female was brooding and did not fly until Mr. Bennett's hand was within a foot of her. We could not determine what had become of the other egg and young bird. The female returned to the nest while the camera was being set up six feet away, then she flew away again.

She did not return again to the nest for twenty-five minutes, and then fed the young Cowbird six or seven times by regurgitation, after



which she carried away the excreta. Thirty minutes later she reappeared and fed the same way again.

On this morning we were impressed by the length of the interval between feedings. Most small birds which bring solid and undigested food to the young make feeding visits every few minutes. With the Pine Siskin the average interval between feeding visits seemed to be twenty-five or thirty minutes.

The young Cowbird is perhaps hereditarily accustomed to more frequent feedings; but when the feedings do come they are voluminous, and the young Cowbird seemed to thrive in spite of the infrequent visits of the foster mother.

SIoux CITY, IOWA.

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### THE PINE SISKIN IN NEBRASKA: ITS SEASONAL ABUNDANCE AND NESTING

BY MYRON H. SWENK

Our commonly consulted authorities on bird ranges agree that the Pine Siskin rarely breeds outside of the coniferous forests of the Canadian zone of the North and of the higher mountain ranges. Ridgway in 1901 (*Birds of North and Middle America, Part I*, p. 98) gave its breeding range as the "northern coniferous forest districts of North America, south to Nova Scotia, New Brunswick, parts of New England, lower Hudson Valley, mountains of Pennsylvania and southward to high mountains of North Carolina, Minnesota, etc., and on the high western ranges quite to the southern boundary of the United States." The American Ornithologists' Union Committee in 1910 (*Check-List of North American Birds, third edition, revised*, p. 250) stated that the species "breeds mainly in Canadian zone from central Alaska, southern Mackenzie, southern Keewatin, and southern Ungava south through the higher mountains of western United States to San Pedro Martir, Lower California, and southern New Mexico, and to northern Minnesota, northern Michigan, New Brunswick, Nova Scotia, and in mountains to North Carolina, and casually in the lower Hudson Valley and Massachusetts." As a matter of fact, however, the Pine Siskin is a rather common breeder, at least in certain years, in eastern Nebraska and other parts of the upper Missouri Valley, in purely Upper Austral zone territory. There are over twenty well-authenticated records of the nesting of the Pine Siskin in Nebraska.

It is well known that the Pine Siskin is one of our most irregular birds in its migratory movements. Here in southeastern Nebraska,